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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,056	03/15/2001	Andrew P. DeJaco	010004	7271
23696	7590	07/07/2005	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			PHAN, TRI H	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,056

Applicant(s)

DEJACO ET AL.

Examiner

Tri H. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 14 is/are pending in the application.
- 4a) Of the above claim(s) 8-13, 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 0201 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on April 8th, 2005. Claims 8-13 and 15-16 are now canceled. Claims 1-7 and 14 are now pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zhou et al.** ("Bypassing Vocoders in CDMA Mobile-to-Mobile Calls", 04-1998, IEEE, 0-7803-4320-4, pages 2527-2531; hereinafter refer as '**Zhou**') in view of **Lehtimäki, Matti** (U.S.6,125,120; hereinafter refer as '**Lehtimäki**').

- In regard to claims 1 and 14, **Zhou** discloses in Figs. 1, 3, 4 and in the respective portions of the specification about the method for bypassing vocoder in wide-band mobile-to-mobile calls CDMA ("*wideband speech signal*"; wherein the speech coder in the mobile station

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converts the speech signal into digital signal for transmitting over wide-band CDMA) through PSTN backbone network ("*narrowband communication system*"; For example see Fig. 1) or ATM (For example see Fig. 3); wherein the base station controller 'BSC' ("*base station*") converts the voice packets ("*data packets*") received from the mobile station ("*remote station*") into the pulse code modulation 'PCM' voice packets ("*narrowband digital signal*") for transmitting to other BSC ("*second base station*") and to other mobile station ("*second remote station*") through the PSTN backbone network (For example see Fig. 1; Abstract and para 1: Voice Path of Current Calls, page 2527). **Zhou** does disclose about the converting between PCM and variable rate compressed QCELP voice packets for CDMA mobile-to-mobile calls, but fails to explicitly disclose about the method "*puncturing*" the narrowband digital signal and "*separating*" the narrowband digital signal. However, such implementation is known in the art.

For example, **Lehtimäki** discloses in Figs. 1, 3A-B and in the respective portions of the specification about the method and transmission equipment for the interexchange connection between the public switched telephone network 'PSTN' and the mobile communication networks such as GSM, for mobile to mobile call 'MMC', (For example see Fig. 1; col. 2, line 39 through col. 5, line 36; col. 13, lines 12-34); forming the subchannels in one or two least significant bits of the PCM samples in the PCM channel between the transmission equipment for vocoded speech or data ("*puncturing the narrowband digital signal with the plurality of data packets*") by inserting the TRAU frame's bits (For example see Figs. 3A-B; col. 7, line 38 through col. 8, line 4) and separating the TRAU frames and PCM samples ("*separating the narrowband digital signal*"; For example see Fig. 7; col. 9, lines 4-45).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Lehtimäki**, by implementing the subchannels in one or two least significant bits of the PCM samples in the PCM channel between the transmission equipment for vocoded speech or data into the variable rate compressed voice packets as taught by **Zhou**, with the motivation being to provide the compressed method for vocoded speech or data between the transmission equipment as disclosed in the **Lehtimäki**'s abstract.

- Regarding claims 2 and 7, in addition to features in base claim 1 (see rationales pertaining the rejection of base claim 1 discussed above), **Zhou** further fails to explicitly disclose about the "*puncturing*" method occurs in the "*least significant bits*" of the narrowband digital signal. However, such implementation is known in the art.

Lehtimäki discloses about the forming of subchannels in least significant bits ("*least significant bits*") of the pulse code modulated '*PCM*' sample ("*puncturing*"; For example see **Lehtimäki**: Figs. 3A-B; col. 7, lines 38-58).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Lehtimäki**, by implementing the subchannels in one or two least significant bits of the PCM samples in the PCM channel between the transmission equipment for vocoded speech or data into the variable rate compressed voice packets as taught by **Zhou**, with the motivation being to provide the compressed method for vocoded speech or data between the transmission equipment as disclosed in the **Lehtimäki**'s abstract.

4. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zhou et al.** ("Bypassing Vocoders in CDMA Mobile-to-Mobile Calls", 04-1998, IEEE, 0-7803-4320-4, pages 2527-2531) in view of **Lehtimäki, Matti** (U.S.6,125,120) as applied to claims 1-2 and 7 in part 4 rejection above, and further in view of **Tseng et al.** (U.S.6,172,974).

- In regard to claims 3-5, in addition to features in base claim 1 (see rationales pertaining the rejection of base claim 1 discussed above), the combination of **Zhou** and **Lehtimäki** does disclose about the tandem free operation in the mobile to mobile calls 'MMC' (For example see **Zhou**: col. 12, line 26 through col. 13, line 11; **Lehtimäki**: Fig. 3; Abstract) and about the transcoder units at the base stations ("*vocoders in the in-path equipments*"; For example see **Zhou**: Figs. 1-3; **Lehtimäki**: Fig. 1; col. 1, lines 44-65) and about the echo cancellers in the PSTN gateway ("*echo cancellers in the in-path equipments*"; For example see col. 13, lines 38-51), but fails to explicitly disclose about the method for "*disabling the echo cancellers*" of the in-path equipment for tandem free operation. However, such implementation is known in the art.

For example, **Tseng** discloses about the method and apparatus for achieving tandem free operation 'TFO' capabilities between terminals of the communication network having tandemed vocoder; wherein the decoder 26, 28 in the vocoder 24 ("*decoding portion of the vocoder*"; For example see Fig. 4) and disabling network echo cancellers 50 in the original and terminal elements, in the forward and backward directions, ("*disabling echo cancellers*"; For example see Fig. 4; col. 2, lines 50-67; col. 6, lines 44-62).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Tseng**, by implementing the tandem free operation 'TFO' capabilities into the terminals as taught by the combination of **Zhou** and **Lehtimäki**, with the motivation being to improve the quality of the speech signals transmitted between terminals in the communication network having tandem vocoder as disclosed in **Tseng**: col. 1, lines 17-25.

- Regarding claim 6, in addition to features in base claim 1 (see rationales pertaining the rejection of base claim 1 discussed above), the combination of **Zhou** and **Lehtimäki** does disclose about the "*negotiating*" for tandem free operation in the mobile to mobile calls 'MMC' (For example see **Zhou**: Figs. 3-4, e.g. 'BSC contact request'; **Lehtimäki**: col. 12, line 26 through col. 13, line 11) and **Tseng** discloses about the "*negotiating*" for tandem free operation in the mobile to mobile calls (For example see col. 6, lines 6-29).

Response to Amendment/Arguments

5. Applicant's arguments filed on April 8th, 2005 have been fully considered but they are not persuasive.

Applicant argues that the combination of **Zhou** and **Lehtimäki** fails to disclose the method for "*transmitting wideband speech signals over a narrowband communication system*". Examiner respectfully disagrees. **Zhou** does disclose about the CDMA mobile-to-mobile call ("*wideband*"), e.g. mobile-to-land transmission and land-to-mobile transmission, through PSTN ("*narrowband*") backbone network as disclosed in Fig. 1, or with PSTN and ATM networks as

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disclosed in Fig. 3 with bypasses vocoders; wherein the speech coder in the mobile station converts the speech signal into voice packets for transmitting over wide-band CDMA, i.e. “*wideband speech signals*”, to base station; and from base station to base station with ‘PCM’ voice packets, i.e. “*narrowband digital signal*”, over the PSTN backbone network, i.e. “*narrowband communication system*”, as disclosed in Fig. 1; but fails to explicitly about the method for “*puncturing*” for the narrowband digital signal at the first base station and method for “*separating*” the narrowband digital signal at the second base station. **Lehtimäki** discloses about the method and transmission equipment for the interexchange connection employing speech coding between the public switched telephone network ‘PSTN’ (“*narrowband communication system*”) and the mobile communication networks such as GSM for mobile to mobile call ‘MMC’; wherein the compression apparatus connected by a plurality of PCM transmission channels for receiving the speech signal from each PCM transmission channel and transferring the speech signal the interconnecting PCM link having the transmission capacity lower than the number of transmission channels received from the switching center to the other compression apparatus (“*transmitting wideband speech signals over the narrowband communication system*”; For example see Figs. 1 and 5); in which the speed signal between the switching center and the compression apparatus is a PCM coded speech signal which one or more least significant bits of the PCM samples provide a sub-channel for lower-rate vocoded speech in the vo-coded format (“*puncturing the narrowband digital signal*”; For example see Figs. 3A-B, 6A-B). By implementing the compression method as taught by **Lehtimäki** into the variable rate compressed voice packets as taught by **Zhou**, the variable rate vocoding of the mobile communication system will utilize digital speech transmission and speech coding techniques reducing the

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transmission rate over the PSTN backbone network. Therefore, Examiner concludes that the combination of **Zhou** and **Lehtimäki** teaches the arguable features.

Claims 2-7 are rejected as in Part 3 and 4 above of this Office action and by virtue of their dependence from claim 1.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dent, Paul W. (U.S.5,668,837), **Backstrom et al.** (U.S.6,792,267) and **Kirla et al.** (WO 03/003770) are all cited to show devices and methods for improving coding technique in the wideband/narrowband of the telecommunication architectures, which are considered pertinent to the claimed invention.

7. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
June 21, 2005



BRIAN NGUYEN
PRIMARY EXAMINER